Institute for social research - Zagreb
Centre for educational research and development

Ministry of science, education and sport

DEVELOPMENT OF A MODEL OF TEACHER LIFELONG EDUCATION AND LEARNING

(extended summary of first-year project report)
principal researcher: prof. dr. Vlasta Vizek Vidović

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Introduction

Comparative studies of different international teacher education (TED) systems indicate that, in order to be both efficient and effective, those systems should be based on concepts of educational sciences. Therefore, the main goal of this project is to analyse Croatian TED system from the perspective of the systemic approach and cognitivistic models of teaching and learning, as well as to make comparison of Croatian TED system with such systems in EU and other countries, which have been recognized as effective in various comparative studies, in order to lay grounds for the development of a model of TED that would support student competencies in a more efficient manner. As educational systemic changes can be implemented only if there is minimal consensus between different stakeholders' attitudes, values and expectations in regard to justification and potentials for those changes, this study also takes into account their opinions and perceptions. Obtained results will support the development of TED system that should facilitate forthcoming educational reform in Croatia.

The outcome of this study should be a proposal of an open, dynamic and balanced model of lifelong TED by means of conceptual, comparative and empirical analysis. Proposed model should enable continuous professional development and competent management of the demands of a decentralized educational system in which the teacher has high level of autonomy in planning and conducting educational process. In addition, proposed model should qualify teachers for autonomous and proactive planning and teaching, as well as for self-evaluation and improvement of their professional work. Acquiring such level of competence is necessary for achievement of the key demand of ''learning society'' – preparing students for self-regulated lifelong learning. Since education system is in continuous dynamic interaction with other social subsystems, we consider systemic approach to be an appropriate theoretical frame for examining teacher education in broader social context.

Changes of TED system are also crucial for successful transformation of the whole education system since teachers are responsible for transferring educational concepts into practice. Different stakeholders of education system emphasize the importance and inevitableness of deep structural changes of education system. Traditional approach, still dominant in curricula design and educational practice, is perceived as restrictive developmental factor in regard to the orientation of well-developed countries towards establishing knowledge and competence-based society.

Thus far, following project tasks have been completed:

1. Comparative analysis. General developmental trend of TED systems has been analysed by studying key policy documents of European institutions and other international organizations concerned with monitoring and examining different education systems. In addition to that, education systems of selected sample of countries have been analysed in depth. The criteria for selection of these countries were: **a)** they can be considered as examples of good practice (Austria, Denmark, Finland, Ireland, Germany - NRW, Netherlands, Slovenia and Sweden) and/or **b)** they belong to the similar cultural circle as Croatia.

2. Teacher education in Croatia – overview of current situation. By examining official policy documents, studies and working papers of different expert groups, we analysed current structure of Croatian TED system, as well as existing tendencies concerning its transformation.

3. Empirical study was conducted with different key agents of the TED system. Those surveys were conducted examining different stakeholders' perceptions of initial and in-service TED, as well as their beliefs and attitudes towards professional role of teachers. The participants were: 1334 classroom teachers, 2134 subject teachers in primary schools, 949 students (future teachers) and 62 university teachers at different teacher education institutions. Obtained results are statistically analysed and preliminary results can be found in the project report.

Project is now in its final year, and the tasks to be completed are:

a) To update comparative study with the most recent developmental trends and changes in TED systems, as well as to update the newest developmental trends and ideas in Croatia.

b) To finalize data analysis and interpretation of results obtained in empirical study.

c) To conduct empirical study on subject teachers in secondary schools.

d) To outline TED model that promotes lifelong learning and continuous personal and professional development.

Summary of empirical study

This summary briefly reports results obtained by surveys applied on different TED system stakeholders. Complete results can be found in project report.

Classroom teachers, subject teachers and students (future teachers)

Very low level of knowledge and skills acquired during initial education for classroom teachers is obtained in following domains: s*chool legislation, working with gifted pupils, working with pupils with emotional and learning difficulties* and *application of IT in teaching*. Classroom teachers consider themselves best prepared in following areas: *application of teaching methods, knowledge in specific academic discipline (subject)* and *planning and defining teaching goals*. All elements of courses' organization are rated above average (ratings above theoretical average of 2.5), whereby the ratings of practical courses are the highest, and the ratings of student evaluation and assessment methods are the lowest. Regarding their suggestions for improvement of course organization, most of them are directed to more practical examples, classroom practice, direct work with children and use of educational technologies.

On the other side, students - future classroom teachers consider themselves best prepared for following domains of teaching profession: *application of teaching methods, knowledge in specific academic discipline (subject)* and *planning and defining teaching goals*. Lowest rated areas are: *classroom management, communication and cooperation with parents*, and *school legislation*. Students show the highest level of satisfaction with practical courses, and the lowest level of satisfaction with student evaluation and assessment methods.

Considerable number of classroom teachers attended some programmes of in-service teacher training. In most of the cases, those programmes included lectures, workshops and seminars (2-3 times a year). In their opinion, workshops are the most efficient and the best part of their in-service training. Most of the classroom teachers consider that they should receive credits for participation in in-service training and should be promoted considering number of credits accumulated. They also think that classroom teachers should have the opportunity to obtain education at postgraduate level (educational sciences and methodics).

In regard to classroom teachers' attitudes towards teaching practice and the role of the teacher, they are somewhat more pupil-orientated (humanistic). Classroom teachers, whose orientation is humanistic, estimate their level of knowledge and skills acquired during initial TED as lower compared to ratings of teacher-oriented (traditional) classroom teachers. Pupil-oriented teachers also show lower level of satisfaction with course organization compared to traditional ones and they express grater need for psychological and pedagogical education, while traditional teachers would like more education in specific academic discipline (subject). There are also a larger number of pupil-oriented teachers who recognize the need for education at postgraduate level (educational sciences and methodics).
Compared to classroom teachers, students are more traditionally oriented in regard to their attitudes towards teaching practice and the role of the teacher.

Comparison of classroom and subjects teachers implies following:

a) Compared to classroom teachers, subject teachers, during initial TED as well as in their work, have more traditional views on teaching and the role of teacher i.e. they are more oriented towards the content of their academic discipline (subject) and the amount of information transmitted. Classroom teachers are more pupil-oriented.

b) Classroom teacher consider psychological and pedagogical education to be more important, than subject teachers do. This is expected considering the age of children that classroom teachers work with, and it is understandable that they are more interested in child's development and upbringing than subject teachers are.

c) When it comes to in-service teacher training, classroom teachers participate in more in-service training programs than subject teachers. Classroom teachers also recognize the need for education at postgraduate level (educational sciences and methodics) more than subject teachers. Possible explanation of the obtained results is that classroom teachers still don't have the opportunity for postgraduate education at the institution where they graduated, while such opportunity for subject teachers exists.

Students - future subject teachers rate the level of knowledge and skills acquired during initial education highest when it comes to courses in academic discipline (subject), and the lowest when it comes to working with pupils with learning difficulties, communication and cooperation with parents, and application of teaching methods. They are also very dissatisfied with student evaluation and assessment methods. Their orientation towards teaching practice and the role of the teacher is more humanistic than traditional.

University teachers

Considering initial and in-service TED, most of the university teachers who participated in this survey, think that teacher colleges should provide education for pre-school and classroom teachers, while teacher faculties should provide education for subject teachers in elementary and secondary schools. Most of the participants think that cooperation between teacher colleges and teacher faculties should be established especially through organization of psychological and pedagogical courses. More that 60% of university teachers also think that such cooperation can be established through organization of academic courses and practical courses, as well as through educational research. Most of the university teachers (75%) consider that different faculties should be included in initial teacher education courses. Organization of courses for subject teachers in elementary schools and in secondary schools should be, in university teachers' opinion, organized differently because of the different age and cognitive development of children involved in elementary vs. secondary education. In regard to the model of course organization, simultaneous and modular organization are preferred for education of classroom teachers, while successive and modular organization is preferred for education of subject teachers. There is a high consensus of university teachers in this matter and therefore there is no need to change a "two majors" model at teacher faculties.

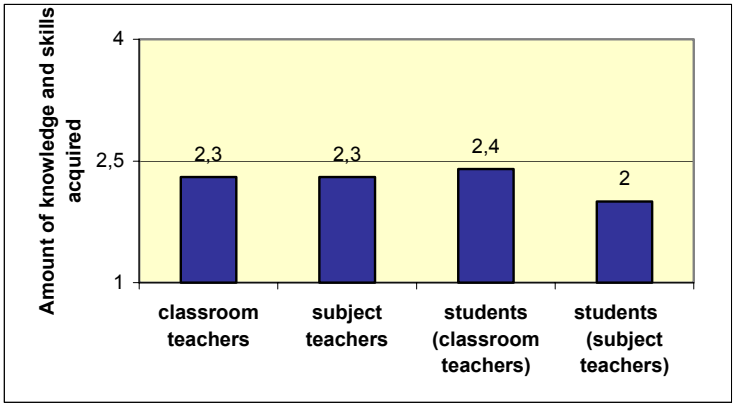
Achievement of balance in professional, scientific and psychological and pedagogical competence, as well as development of academic, psychosocial and other competences are most frequently mentioned as desirable outcomes of teacher education programmes.

University teachers' satisfaction with the quality of initial education and in-service teacher training is, on the average, quite low. Part of their dissatisfaction lies in the fact that some of the recent and important topics in psychology and pedagogy are not included in initial TED programme, and that there is the need for reorganization of methodic courses. University teachers consider that criteria, which could be recognized as relevant for the effectiveness and quality of initial TED, should be defined in terms of pupils' learning outcomes and the quality of initial teacher education itself.

In regard to the quality of in-service teacher training, most of university teachers (more than 65%) consider it as unsatisfactory. University institutions are considered as most important actors in organizing in-service teacher training, which includes postgraduate education (scientific or professional) as well. Approximately 60% of university teachers think that it would be good to establish Department of Educational Sciences within the University.
In their comments on the changes of TED education, university teachers state that some EU countries could be taken as examples of good practice considering course organization, school practice, financing TED and in-service teacher training, and investing in educational research. University teachers support harmonization with EU TED systems, not only at the level of course organization, but in the degrees' titles as well.

Some of the **main results** of empirical study can be observed in following figures:

Figure 1.Perceived level of knowledge and skills acquired during initial education

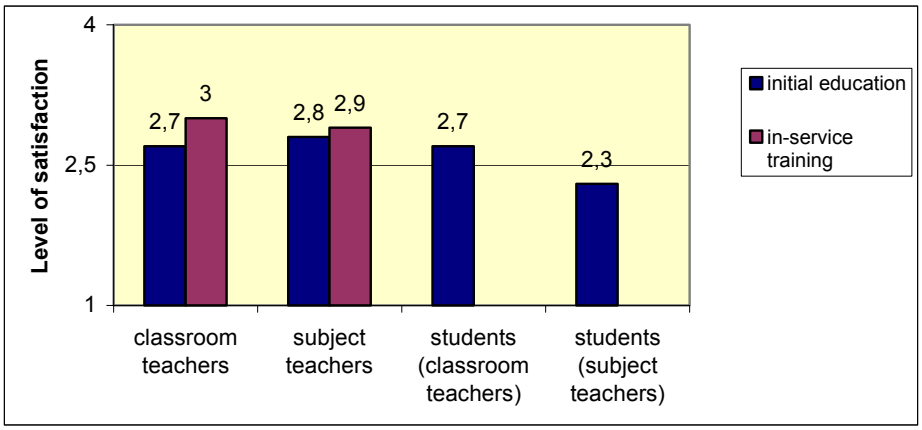


•Ratings are on the scale from 1 – "not satisfactory" to 4 – "very satisfactory"
•Reported results are average ratings obtained on 20 items-scale

Table 1. Knowledge and skills-items with below-average ratings for different sub-samples (*rank 1 indicates the lowest satisfaction level*)

KNOWLEDGE AND SKILLS	CLASSROOM TEACHERS	STUDENTS (CLASSROOM TEACHERS)	SUBJECT TEACHERS	STUDENTS (SUBJECT TEACHERS)
Application of IT in education	1	11	1	3
Working with pupils with emotional and behavioural disorders	2	6	2	1
Working with pupils with learning difficulties	3	5	3	2
Working with gifted pupils	4	4	7	6
School legislation	5	1	6	5
Communication and cooperation with parents	6	2	5	4
Education on human rights and civil society	7	8	8	10
Application of practical skills	8	7	10	7
Evaluation of educational process and self- evaluation	9	10	-	-
Classroom management	-	3	4	8
Development of ecological awareness	-	-	9	9
Development of pupils' learning skills	-	12	-	-
Developing pupils' ethical reasoning and behaviour	-	13	-	-
Pupils' evaluation and assessment methods	-	9	-	-

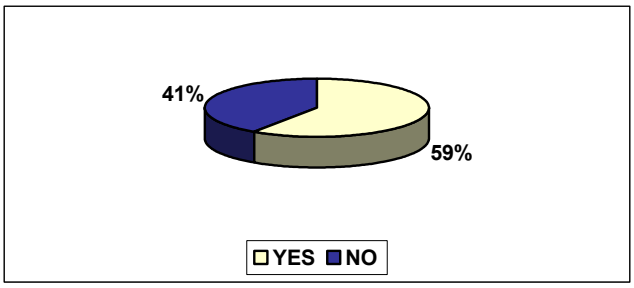
Figure 2. Level of satisfaction with organization of initial education and in-service training



•Ratings are on the scale from 1 – "lowest satisfaction" to 4 – "highest satisfaction"
•Reported results are average ratings obtained on 8 items-scale for initial education and 7 items-scale for in-service training

Figure 3. and **4.** Classroom teachers: views on in-service teacher training and postgraduate education

Should classroom teachers receive credits for participation in in-service training and be promoted considering number of credits accumulated?



Should classroom teachers have the opportunity to obtain education at postgraduate level in educational sciences and methodics?

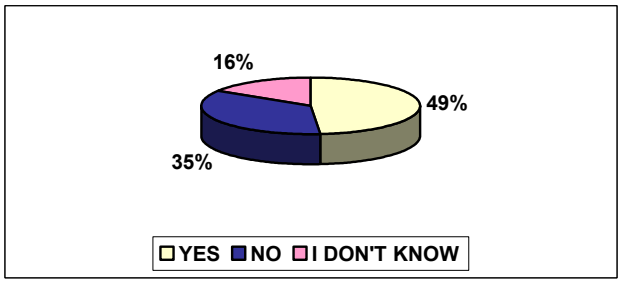
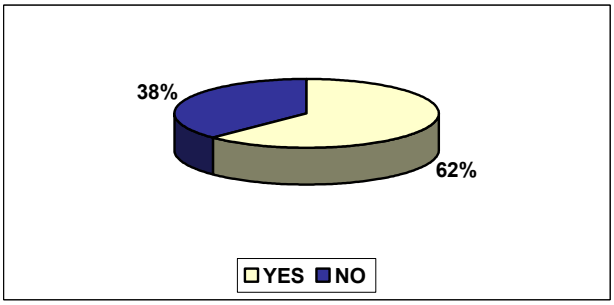


Figure 5. and **6.** Subject teachers: views on in-service teacher training and postgraduate education

Should subject teachers receive credits for participation in in-service training and be promoted considering number of credits accumulated?



Should subject teachers have the opportunity to obtain education at postgraduate level in educational sciences and methodics?

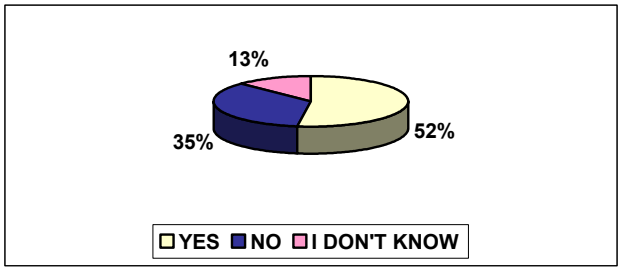
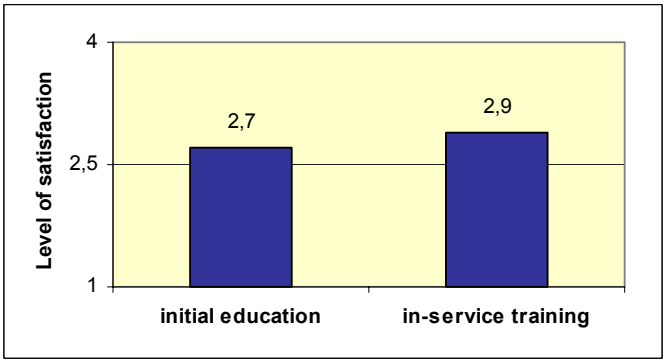


Figure 7. University teachers' ratings of quality of initial teacher education and in-service teacher training



*Ratings are on the scale from 1 – lowest to 4 – highest

Table 2. Under-represented topics in initial TED
(*in brackets are ranks based on 75% agreement among university teachers - rank 1 is the lowest one*):

CLASSROOM TEACHERS	SUBJECT TEACHERS
Development of pupils' learning skills (1)	**Development of pupils' learning skills (2)**
Development of pupils' ethical reasoning and behaviour (3)	**Development of pupils' ethical reasoning and behaviour (3,5)**
Development of pupils' critical thinking and creativity (6)	**Development of pupils' critical thinking and creativity (5)**
Development of pupils' social and communication skills (5)	**Development of pupils' social and communication skills (3,5)**
Encouraging motivation for learning (2)	**Working with pupils with difficulties (1)**
Self-evaluation (4)	

Summary of the preliminary results and discussion

This summary is based on the interpretation of the collected data at three levels of study: conceptual, empirical and comparative level. The results will be presented separately for the education of classroom teachers and education of subject teachers in the upper grades of elementary schools.

1. Education of classroom teachers

1.1 Initial education

a) Course level

Based on the comparative analyses and the insight into current legislation, professional debates and official documents, as well as on the findings of the empirical research it can be concluded that there is a need and readiness of different stakeholders to transform the classroom teachers' education course to the University level. Such reform may be justified with both conceptual and practical reasons. "*Main stream*" changes observed in the field of education are:

- financial decentralisation of the system;
- greater autonomy of the local community and schools in the curriculum design;
- focus on quality insurance through external evaluation as well as self-evaluation;
- need for lifelong learning;
- emphases on the encouragement of pupils' critical thinking and social sensitivity;
- encouraging of pupils' talents and creativity;
- increasing diversity in the cultural heritage of pupils and special developmental needs;
- more diverse approaches to evaluation of pupils acceleration and assessment of pupils' achievements;
- introducing IT into teaching and the school system.

These changes require a greater level of professionalism of a teacher's role. Teachers' efforts should shift from the transfer of subject content to the encouragement of learning by preparing pupils towards lifelong learning and achievements fitting their abilities.

The basic understanding should be achieved at the tertiary level that the thorough knowledge-base in their respective academic field is a necessary but not a sufficient condition for effective teaching. Greater autonomy in teaching, a need for application of scientific methods in the analyses, critical assessment of one's work and strategic planning skills, making decisions and problem solving in teaching require more time as well as qualitatively new skills, that should be more systematically acquired through a university course. Finally, initial TED should enable teachers to develop communication skills in order to exchange personal experiences.

In practice, primary teachers' education at the university level should allow further professional development at postgraduate level, and would be compatible with most TED systems in European countries.

b) Course organisation

The EU studies concerned with the issue of program harmonisation in the field of teacher education courses so far have not a clear stand on whether TED courses should be adopted according to the Bologna scheme or adopt an old scheme of 4+1. In Croatia there seems to be a greater number of advocates for the later. According to this concept, the fifth year would be focused at the specialisation of a particular academic subject or field. In Europe it is more often specialization in the area of IT competences, foreign language (which qualifies teachers for encouraging early learning of a foreign language), artistic subject or wider areas: social linguistic or natural sciences and mathematics. One of the issues that must be resolved in the course organisation is the level of qualification (competence) obtained after graduate course, more specifically - does this course provide a possibility to work in a school and at what kind of work? This, of course, is an issue that will be clarified after implementation of the changes in elementary education, and after the relation of elementary and compulsory education is defined. Current legislation assumes that after a five year course a person will obtain a title of graduate teacher, although most other professions obtain a master degree after five-year course. Most of the university teachers who participated in the research believe that a five-year course should grant a title of ''Master in education''.

c) Curriculum

Concerning the curriculum planning a few aspects that define the nature of the curriculum for classroom teachers' education course should be emphasised:

The first aspect is the selection of the appropriate model of course regarding the time dynamics for acquiring academic and teaching competences. In general terms the most common model currently used is simultaneous, although in some countries a change to integrative model can be observed. Simultaneous model presumes that academic content and educational sciences content are studied from the first year of the course as two relatively autonomous sets. Integrated approach presumes that academic knowledge is incorporated with the analyses from the educational sciences view on how to adequately teach different age groups in certain subject topics that are included into the curriculum. Research in the field of situational learning and teaching indicates that it is the hardest to transfer knowledge if the conditions are new and different from a situation in which the knowledge was acquired. The closer the conditions in which new skills and knowledge were acquired to the conditions in which they will be taught, the more effective the teaching. Such integrated approach requires a greater cooperation of university teachers from different fields, as well as their ability to demonstrate fundamental values and skills that they expect from their students in the future regardless of whether they concern academic or educational content. Most commonly used model in higher levels of education is modular, which could also be described as thematic. The student elects a set of subjects that allow

acquiring the knowledge and skills from a problem area, such as support in integrating pupils with special needs or development of social and communication skills and prevention of risk behaviour. However it can also include broader and more in-depth study of a specific academic field.

The second aspect that is crucial to the design of the curriculum is participation of specific content i.e. the ratio of academic content, educational sciences content and methodics, and school practice. This ratio in most analysed countries is in the range of 40% to 50% academic content, 30% to 40% educational sciences and methodics and 10% to 15% of school practice with the tendency of greater participation percentage in the area of teacher competences. This ratio does not greatly differ from the current situation in Croatia and it should be respected. In many countries IT skills are singled out with 5% - 10% of time allocated to it. This should be carefully considered when planning Croatian curriculum since the employed classroom teachers as well as students of final years emphasise as one of the main problem of their education insufficient teaching in this area. In this context special attention should be given to organisation and implementation of school practice. Students should be from the very beginning of their studies inaugurated into their future professional role and progressively transform from a reflexive observer to an active participant. Such approach requires close co-operation of universities and schools and especially additional training of school mentors in the area of leadership (classroom management) and counselling.

The third aspect is the strategy of the design of the curriculum. The strategy used in the European project TUNING could be used as an example of good practice since it defines the curriculum content from the perspective of competences that are recognised as desired educational outcomes by different educational stakeholders. We believe that such approach should be applied in the design of the new curricula for classroom teachers' courses, especially through connecting goals of the specific subject with the required generic skills and area competences. Empirical results of our research could be used as a useful source of information in this, since they indicate which areas of school practice should be studied in more depth and covered more broadly in the opinion of the employed and future teachers. It should be emphasised that those are most commonly contents connected to the process aspects (communicative) and specific skills (computer literacy) and less often in mastering the academic content.

1.2. In-service training and post graduate studies,

By re-universitation of TED courses a possibility of obtaining higher qualification at postgraduate level arises. This opportunity is at the same time a challenge to the universities themselves, as they should recognise the importance of establishing such courses for quality improvement of the education system as a whole. Some European countries, especially those that have high quality education systems, enable and encourage their teachers to acquire the highest scientific degrees. Achieving competences in the area of scientific research is a principal guarantee of scientifically based approach to planning, decision making and evaluating of outcomes from the highest level of educational systems to the level of specific class or pupil.

Yet another challenge for the universities is related to establishing the interdisciplinary course in the field of educational sciences. It would be organized on a modular principle and enable the teachers to create their profile of specialization by electing modules. This profile will be their basis for horizontal and vertical mobility in the school system.

On the other hand, due to acceleration in knowledge accumulation in certain scientific fields both in the academic areas as well as in the ones from educational sciences and methodology, a right and a duty of every teacher is to participate in lifelong learning. In accordance with that, a duty of the educational system is to ensure conditions, which will allow teachers to participate in the process of continuous professional training. Regarding the programmes for in-service training it can be seen that in most countries they are decentralised and there is a knowledge market, which involves different service providers. However, since the principle of ensuring quality is equally important, schools are requested to carefully plan in-service training based on the recognized needs as well as the requirement for accreditation of certain programmes by the field experts. Such accreditation has its practical importance as well since it allows for accumulation of ECTC credits, which can be used for salary increments or may be recognized as a requirement for postgraduate programmes.
The key aspect of practical in-service training for novice teachers is a period of the induction in the teaching profession. This kind of "hands on" education in most countries involves mentorship and support, and in some countries additional courses (such as for subject teachers of secondary schools who after graduation enter elementary schools). This induction period should in general take one year, and most often ends with the professional exam and a certificate for autonomous work. Although induction is the responsibility of educational authorities and local communities, and university teachers are at best members of the professional exam boards, the need to involve universities in this sort of teacher support is increasingly evident, primarily in the programmes for training of mentors in the area of leadership (classroom management), counselling, assessment and evaluation of achievements.

2. Education of subject teachers

2.1. Initial teacher education

a) Course level

Comparative analysis indicated the presence of very clear difference between lower and higher subject teachers' education in almost every EU country. In terms of Croatian system of TED, those are teachers who work as subject teachers in elementary and secondary schools. Subject teachers on elementary school level obtain their education at teacher training institutions, and the organization of their courses is modular. Only in a few countries this system is successive, same as for general subjects teachers in secondary schools. However, through the process of unversitation of teacher training institutions, subject teachers' education is in all countries raised to the university level.

Transformation of TED curricula is in the attentional focus, which can be witnessed by special comprehensive EU studies within the EURYDICE program. Namely, the goal is to point out that the universitation of teacher training institution does not automatically imply the integration with university programs for subject teachers. It should be noticed, considering level of cognitive development of children in middle-childhood period, that it is not adequate to teach them in the same way as children in secondary school. Secondary school children' cognitive functions are very similar to those in adults and due to that it is easier to communicate with them on the academic level.
At the age of 10-13, most of the children still function on the level of concrete operations and have not fully developed complex learning strategies like content organization and elaboration. At the end of this period (at the age 13-14) there is qualitative change in their thinking process, and they become capable of specialized formal reasoning in certain academic disciplines. Mostly, due to mentioned cognitive-developmental factors, in 80 % percent of analysed countries classroom education (with different modalities) persists up to the age of 12 or 13!
However, at the same time, it has been noticed that education in specific academic disciplines, especially mathematics and natural sciences, acquired within classroom teacher education courses is not sufficient, either for high-quality teaching or for lifelong learning of teachers.
That is the main reason for emphasizing the new possibility offered by the universitation of classroom and subject teachers' education in terms of connecting academic disciplines with educational sciences and methodics present at classroom teacher education, which are more focused on development.

b) Course organization

Due to some specific teaching characteristics in this ''critical'' period of cognitive development in higher elementary school, there is still the need for simultaneous i.e. integrative model of TED. Those models are characterized by increased ratio of academic content (between 65 and 75%), and teachers specialize in two (or three) subjects. Since these courses are traditionally simultaneous with university course according to the successive model, they are represented according to above-mentioned ratio i.e. academic content is represented from 65 to 75%, educational sciences and methodics from 20 to 35%, and school practice from 10 to 15%.

Education of subject teachers in secondary schools is in all EU country organized according to successive model. Most commonly education in academic disciplines (usually two disciplines) is obtained within undergraduate courses and it ends with baccalaureate, followed by graduate course lasting 1 to 1,5 year within specialized educational sciences departments which are part of the University. It means that the program for acquiring teaching competencies is represented by 20 to 30%. Department of educational sciences can be established within educational faculties as well. Programme of such departments consists of interdisciplinary courses in educational sciences and methodology, and except for graduate level, it also offers various programs of further postgraduate education and specialization, as well as doctoral studies in educational sciences. Departments of educational sciences also participate in creating and implementing different programs of continuous in-service teacher training and they have important role in educational research, which

contributes to quality of their academic program. Sometimes, one of the functions of those departments is to offer specialized teacher training courses for improving competences of University teachers.
There is also another key role of departments of educational sciences – education of vocational teachers in various vocational schools. Teaching in vocational schools is specific and occasionally problematic, because it includes adult learners, which are mostly extrinsic motivated (they can not find a job within their basic profession) and which have very low social and humanistic knowledge related to educational sciences. Recently, these departments are expanding their field of activity in terms of offering additional programs for adult learners who graduated in general academic disciplines and whose graduate education did not include TED courses. These departments also provide educational courses for those teachers, which were out of the profession for considerable time and would like to re-enter it.

Thus far, there is still not enough evidence in comparative studies, which could indicate that these courses will be transformed according to Bologna scheme. However, the 3+2 model of initial subject teacher education provides opportunity to establish diversified courses for two categories of subject teachers. Furthermore, if initial TED is organized modularly, it could facilitate mobility within teaching profession and offer additional in-service training in those competences needed for secondary school teachers in case they would like to teach in elementary schools. The role of accumulation and transfer of ECTS credits is evident in the above-mentioned example.

c) Curriculum

In regard to the curriculum of elementary school TED courses, recent ideas imply that those programs should be realized within university academic courses. In this matter, the need for university teachers' understanding of prospective workload in elementary schools is emphasized.
New topics in the field of educational sciences and methodologies that should be included in curriculum are recognized. Mostly, those topics are related to the issues that are recognized by Croatian teachers as underrepresented and necessary – new technologies, social context of educational system and school management, working with students with special needs, classroom management and conflict prevention, and school violence. In other countries, there is also the need for competences in foreign languages, as well as for classroom multiculturalism.

As previously mentioned, one of the important issues, when it comes to secondary schools subject teachers education, is the lack of educational methodologies, and the lack of courses for acquiring competences needed for pupil-oriented teaching approach based upon interactive teaching, which encourages the development of pupils' social and communication skills, as well as problem-solving, critical thinking and social sensitivity, and responsibility as a foundation for later inclusion in higher education or profession.

Regardless of whether we speak of elementary or secondary school subject teachers, due to relatively separate programs, especially if those programs are organized successively, in some countries there is a trend of introducing elective subjects, whose

role is to prepare students for different aspects of teaching profession in terms of its demands and everyday classroom situations. Those subjects could be very helpful in deciding about the choice for future profession on graduate level.

2.2. In-service teacher training and postgraduate studies

In regard to in-service teacher training and postgraduate studies for subject teachers, as well as induction into teaching profession, previously stated conclusions and suggestions about in-service teacher training and further education could also be applied. It is also important to emphasise that subject teachers, especially those who are educated for teaching in secondary schools, have the opportunity to continue education within their academic discipline on the postgraduate level up to Ph. D.